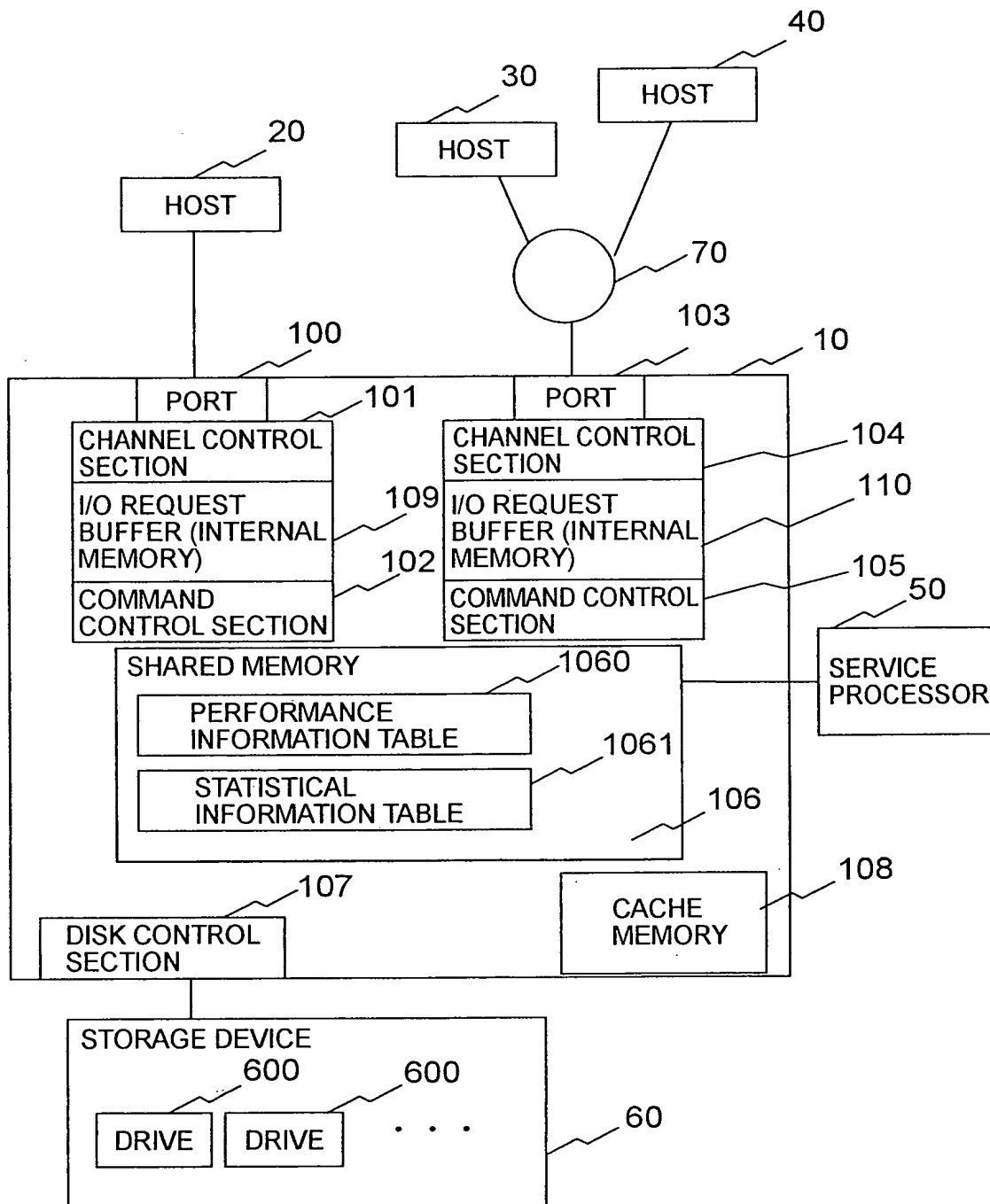


FIG. 1



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FIG. 2

PROCESSING SEQUENCE FOR WRITE I/O REQUEST

WRITE REQUEST: WRITE RECORD 1, RECORD 2, RECORD 3
COMMAND CHAIN: define extent / locate data / write (R1) / write (R2) / write (R3) 70

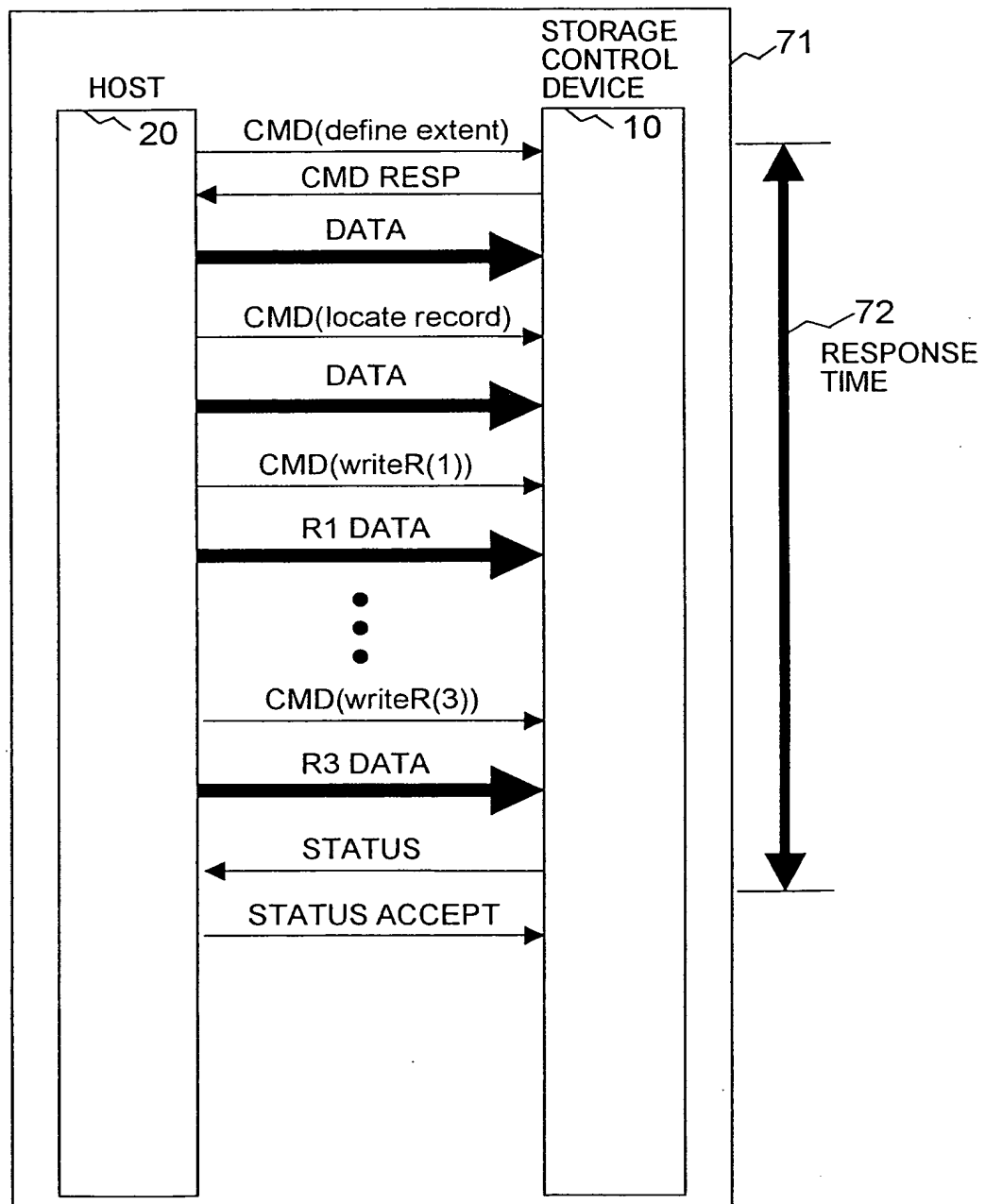
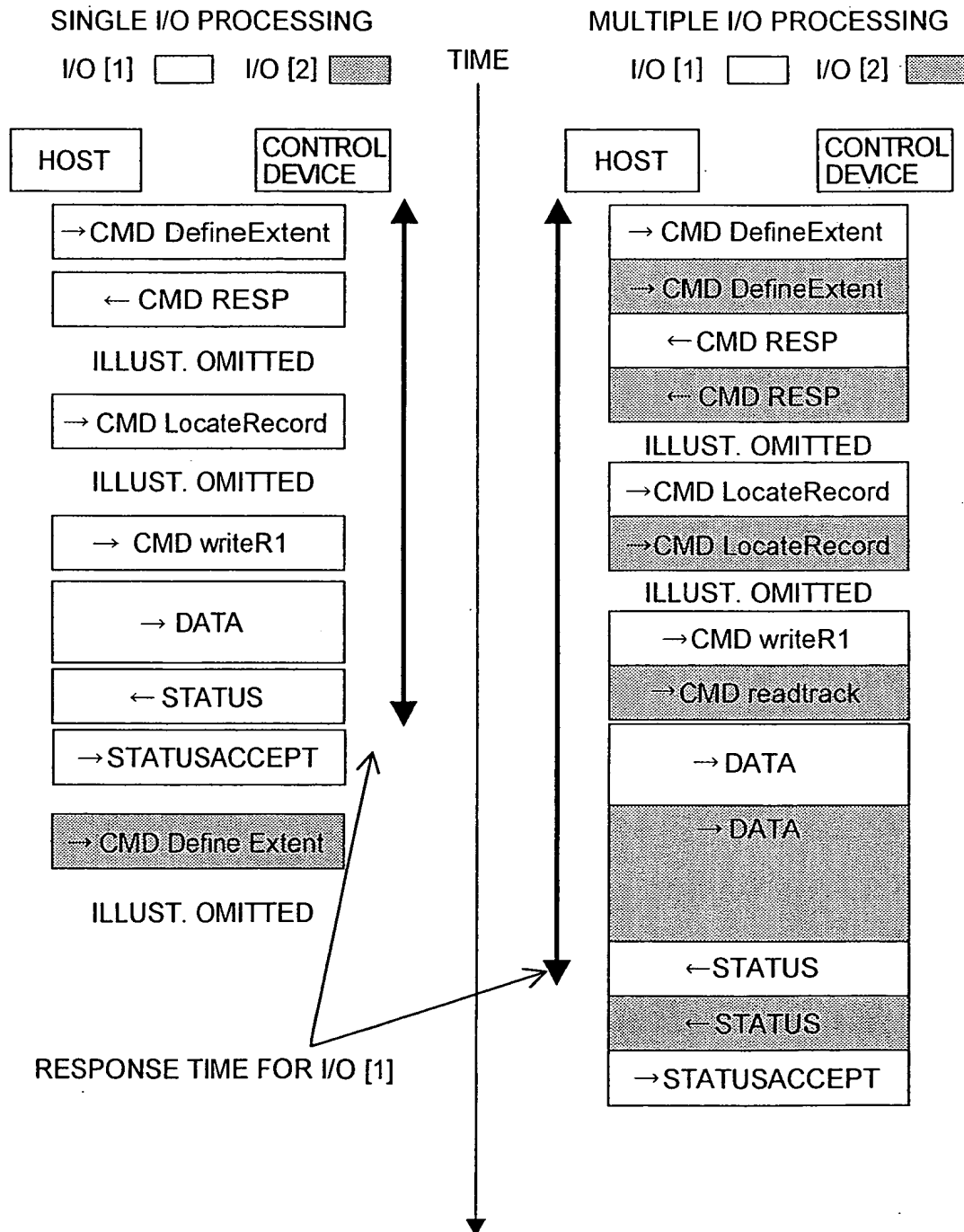


FIG. 3

CONSIDERATION (1) OF RESPONSE TIME WHEN PROCESSING A PLURALITY OF I/O REQUESTS (SINGLE I/O PROCESSING AND MULTIPLE I/O PROCESSING)



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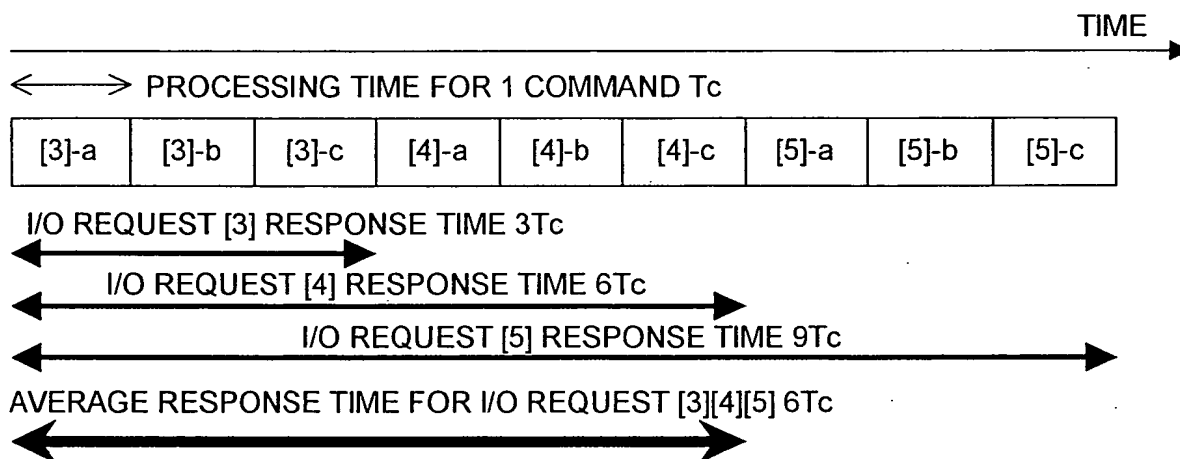
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FIG. 4

CONSIDERATION (2) OF RESPONSE TIME WHEN PROCESSING A PLURALITY OF I/O REQUESTS (SEQUENTIAL PROCESSING AND MULTIPLE PROCESSING)

| | | | |
|-----------------|---------------|---------------|---------------|
| I/O REQUEST [3] | COMMAND [3]-a | COMMAND [3]-b | COMMAND [3]-c |
| I/O REQUEST [4] | COMMAND [4]-a | COMMAND [4]-b | COMMAND [4]-c |
| I/O REQUEST [5] | COMMAND [5]-a | COMMAND [5]-b | COMMAND [5]-c |

CASE 3-A: SEQUENTIAL PROCESSING FOR EACH I/O REQUEST



CASE 3-B MIXED PROCESSING OF A PLURALITY OF I/O COMMANDS

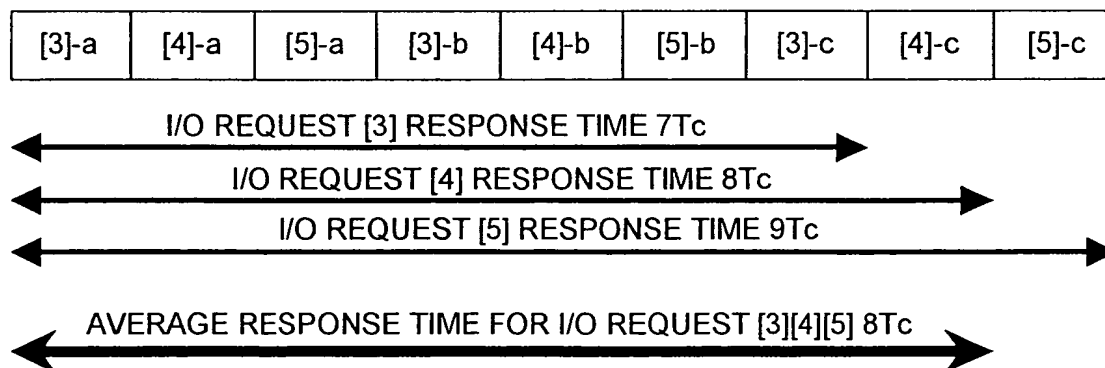
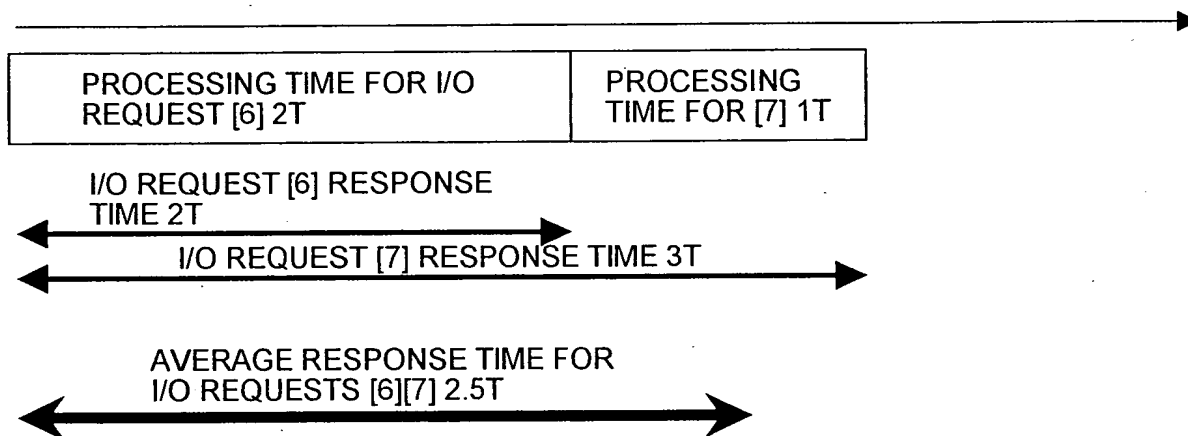


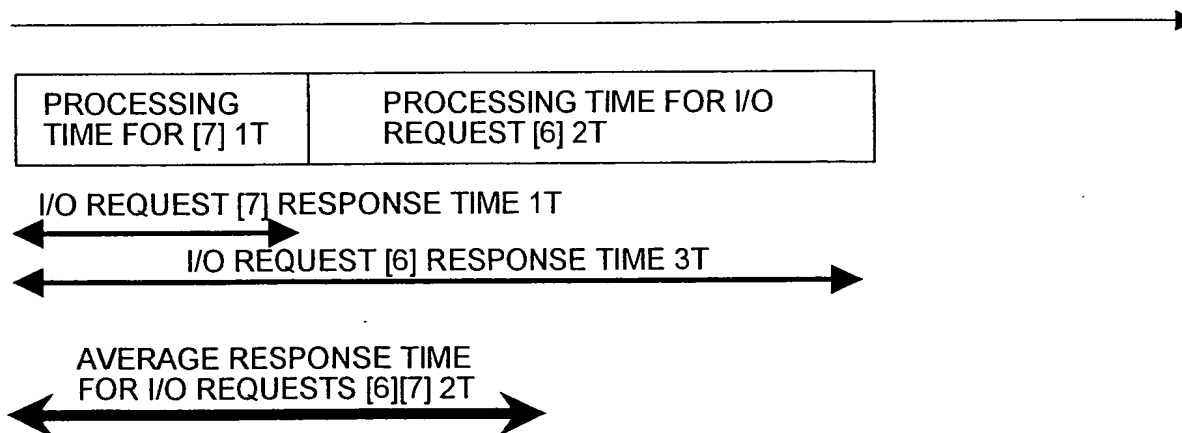
FIG. 5

CONSIDERATION (2) OF RESPONSE TIME FOR PLURALITY OF I/O REQUESTS
(PROCESSING SEQUENCE)TIME TAKEN TO PROCESS I/O REQUEST [6] $2T$ TIME TAKEN TO PROCESS I/O REQUEST [7] $1T$

CASE 4-A: PROCESSED IN SEQUENCE I/O REQUEST [6][7]



CASE 4-B: PROCESSING IN SEQUENCE I/O REQUEST [6][7]



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FIG. 6

TABLE SPECIFICATIONS IN SHARED MEMORY 106

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| COMMAND PROCESSING TIME | |
|-------------------------|---------------------------------------|
| COMMAND TYPE | EXPECTED PROCESSING TIME (μ sec) |
| COMMAND [1] | T1 |
| COMMAND [2] | T2 |
| COMMAND [3] | T3 |
| . | . |
| . | . |
| . | . |
| COMMAND n | Tn |

1060A

| DATA TRANSFER PROCESSING TIME | | |
|--|---------------|---------------------------------------|
| TRANSFER TYPE / TRANSFER LENGTH (byte) | | EXPECTED PROCESSING TIME (μ sec) |
| READ PROCESSING | DATA LENGTH a | Ta |
| | DATA LENGTH b | Tb |
| | . | . |
| | . | . |
| | . | . |
| WRITE PROCESSING | | Tx |
| | DATA LENGTH a | Ta |
| | DATA LENGTH b | Tb |
| | . | . |
| | . | . |
| | DATA LENGTH x | Tx |

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FIG. 7

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| I/O REQUEST BUFFER | | | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|--------------------------------------|
| I/O REQUEST 1 | I/O REQUEST 2 | I/O REQUEST 3 | I/O REQUEST 4 | | I/O REQUEST N |
| EXECUTION SEQUENCE INFORMATION | EXECUTION SEQUENCE INFORMATION | EXECUTION SEQUENCE INFORMATION | EXECUTION SEQUENCE INFORMATION | | EXECUTION SEQUENCE INFORMATION |
| COMMAND a | COMMAND a | COMMAND a | - | | - |
| DATA a | DATA a | DATA a | - | | - |
| COMMAND b | COMMAND b | COMMAND b | - | | - |
| DATA b | DATA b | DATA b | - | | - |
| COMMAND c | - | COMMAND c | - | | - |
| DATA c-1 | - | DATA c-1 | - | | - |
| DATA c-2 | - | DATA c-2 | - | | - |
| DATA c-3 | - | - | - | | - |
| - | - | - | - | | - |
| - | - | - | - | | - |
| - | - | - | - | | - |

| |
|-----------------------------|
| NUMBER OF I/O REGISTERED |
|-----------------------------|

FIG. 8

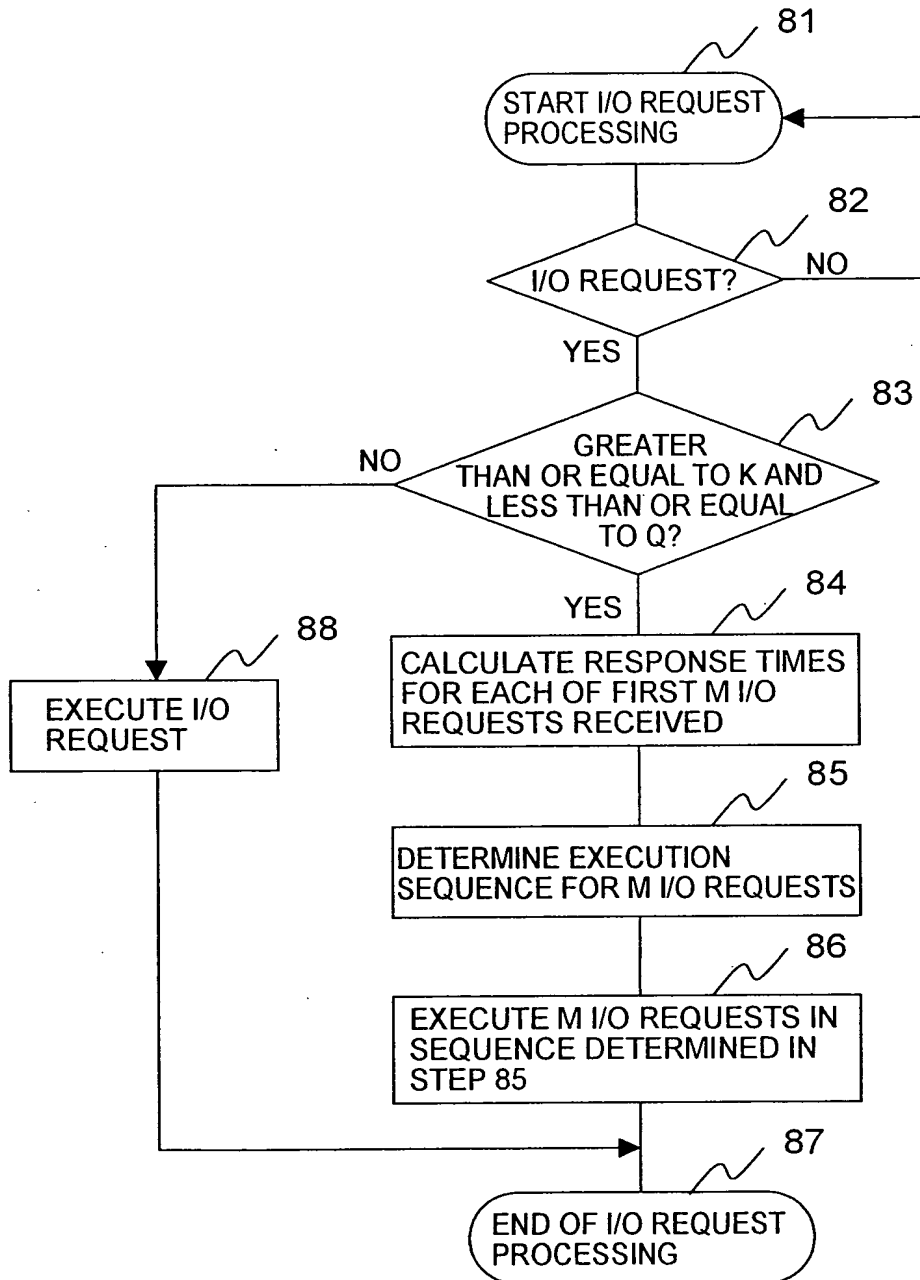


FIG. 9

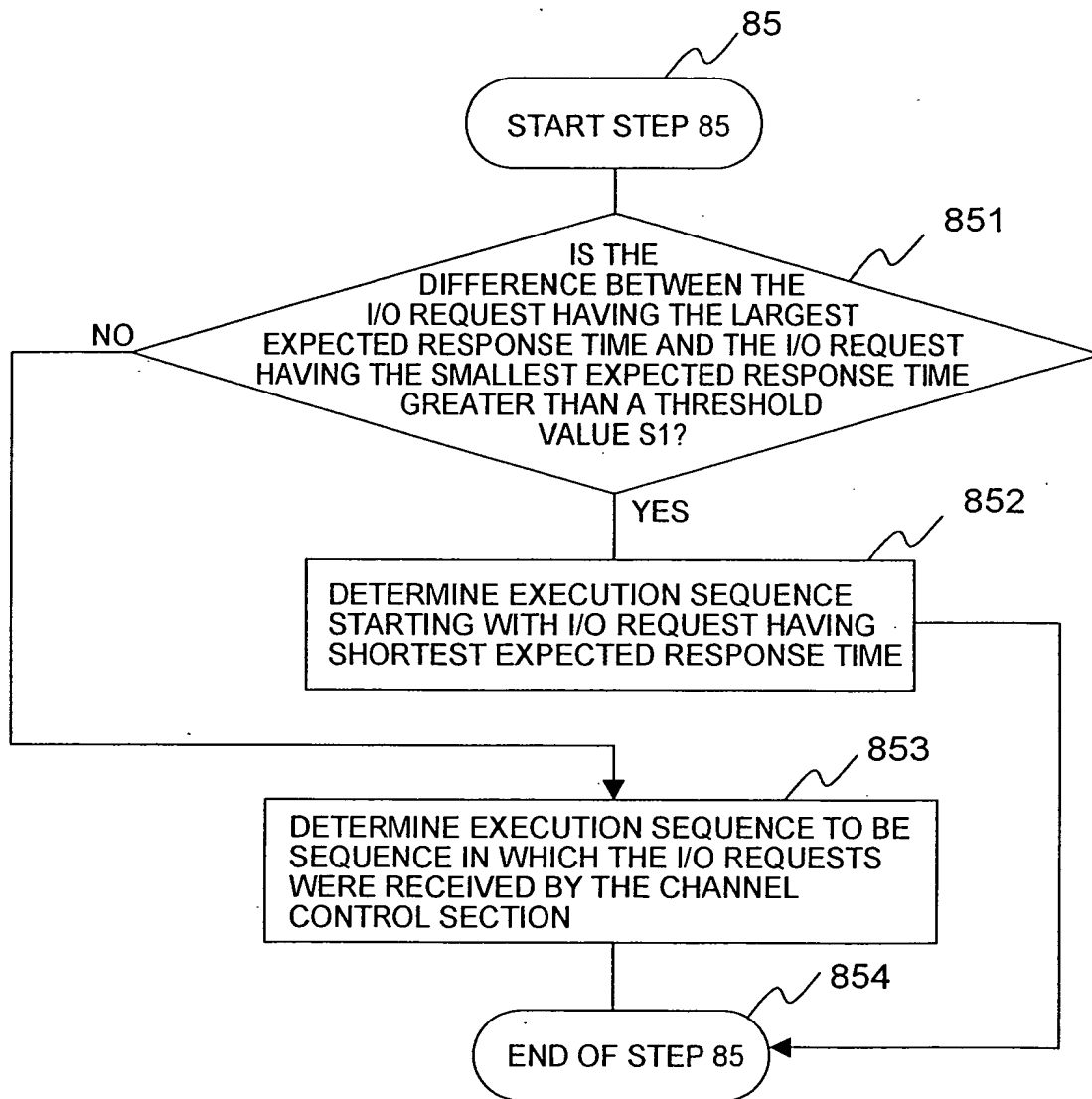


FIG. 10

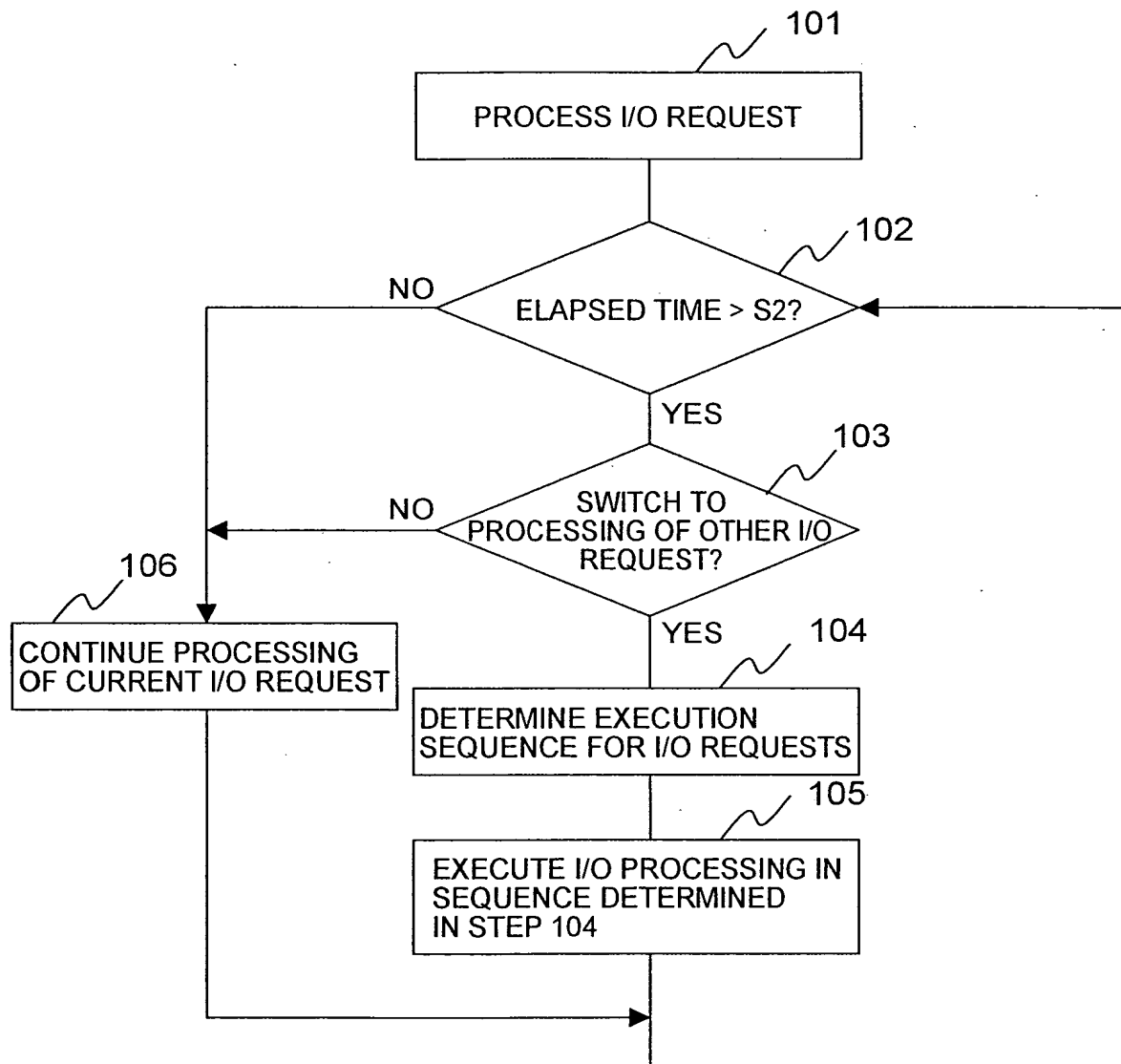


FIG. 11

